

Name:

Enrolment No:



UPES

End Semester Examination, December 2023

Course: Food Processing Technology

Program: B.Sc. (FND)

Course Code: HSND3005

Instructions: Read each question carefully and answer

Semester: V

Duration: 3 Hours

Max. Marks: 100

<b>Section A</b>			
S. No.	MCQs (20Qx1.5M= 30 Marks)	Marks	COs
Q1	Statement 1: Freezing with nitrogen or carbon dioxide gas is rapid freezing. Statement 2: Supercooling is a property of food products. a) True, False b) True, True c) False, False d) False, True	1.5	CO1
Q2	Statement 1: When food items are frozen, there is a drop in temperature followed by a further drop when they freeze. Statement 2: Fish should be rapidly frozen, not slowly frozen. a) True, False b) True, True c) False, False d) False, True	1.5	CO1
Q3	Freon group of refrigerants are: a) Inflammable b) Toxic c) Non-inflammable and toxic d) Nontoxic and non-inflammable	1.5	CO1
Q4	When the crystallization process takes place for a long time, the size of the crystals is _____. a) Small b) Large c) No crystals formed d) None of the mentioned	1.5	CO1
Q5	Ice crystals in frozen meat should be formed by rapid crystallization.	1.5	CO1

	<p>a) True b) False</p>		
Q6	<p>Which of the following dryers is used to produce powder from the solution?</p> <p>a) Spray dryer b) Cabinet tray dryer c) Pneumatic dryer d) Fluidized bed dryer</p>	1.5	CO2
Q7	<p>What is the full form of LSU dryer?</p> <p>a) Louisiana State University dryer b) Low simple universal dryer c) Low and slow unit dryer d) Level steady unit dryer</p>	1.5	CO2
Q8	<p>Evaporation, desiccation and dehydration all mean the same thing.</p> <p>a) True b) False</p>	1.5	CO2
Q9	<p>Which of the following is an advantage/use of dried food items?</p> <p>a) Lesser cost and minimum labour required b) Limited processing equipment and minimum food storage requirements c) Reduction in distribution costs d) All of the mentioned</p>	1.5	CO2
Q10	<p>Which of the following dryers is the convectional drying equipment with enclosed insulated chambers?</p> <p>a) Fluidized bed dryer b) Drum dryer c) Cabinet tray dryer d) Pneumatic dryer</p>	1.5	CO2
Q11	<p>Viruses can be eliminated by irradiation.</p> <p>a) True b) False</p>	1.5	CO3
Q12	<p>How can someone identify that packaged food is irradiated?</p> <p>a) Agmark b) ISI mark c) Radura mark d) FPO mark</p>	1.5	CO3
Q13	<p>Recently, cancer-causing effects, nutritional destruction of food and biological effects of exposure to microwave heating have come to light.</p> <p>a) True b) False</p>	1.5	CO3

Q14	<p>Statement 1: Microwave heating helps save electricity.</p> <p>Statement 2: The quality of the product in microwave heating is good hence rejections are lesser.</p> <p>a) True, False  b) True, True  c) False, False  d) False, True</p>	1.5	CO3
Q15	<p>Statement 1: In microwave heating, heat is not applied to the food item.</p> <p>Statement 2: Radiation doesn't give uniform drying whereas microwave heating does.</p> <p>a) True, False  b) True, True  c) False, False  d) False, True</p>	1.5	CO3
Q16	<p>Which of the following applications is a belt conveyor used for?</p> <p>a) Material transportation over long distances  b) Material transportation within the premises  c) Material transportation for processing  d) All of the mentioned</p>	1.5	CO5
Q17	<p>Pneumatic conveying is done under which of the mentioned conditions?</p> <p>a) High pressure  b) Vacuum  c) Fluidization  d) Any of the mentioned</p>	1.5	CO5
Q18	<p>What is the flow rate of materials in a bucket conveyor dependent on?</p> <p>a) Shape of the buckets  b) Spacing of the buckets  c) Speed of the conveyor  d) All of the mentioned</p>	1.5	CO5
Q19	<p>Statement 1: Secondary packaging is outside the primary packaging, so as to group the primarily packed objects.</p> <p>Statement 2: Packaging can be arbitrarily classified into Primary, Secondary and Tertiary Packaging.</p> <p>a) True, False  b) True, True  c) False, False  d) False, True</p>	1.5	CO4

Q20	Why is irradiation important in garlic and onion? a). To prevent rotting. b). To prevent germination. c). To prevent post-harvest diseases. d). To prevent post-harvest insects.	1.5	CO3
<b>Section B</b> <b>(4Qx5M=20 Marks)</b>			
Q 1	List out the importance of the drying process.	5	CO4
Q 2	Differentiate between slow and quick freezing.	5	CO2
Q 3	Explain the refrigeration cycle. Differentiate between sensible and latent heat.	5	CO1
Q 4	What do you understand by cooling load? List down the major contributors to cooling/refrigeration load.	5	CO1
<b>Section C</b> <b>(2Qx15M=30 Marks)</b>			
Q 1	Ramesh is assigned the task of designing cold storage. Describe the step-by-step design process with the calculation formula required. <b>(10 marks)</b> What are the multiple purposes of load calculations? <b>(5 marks)</b>	15	CO3
Q 2	Sunil is planning for a frozen food manufacturing unit. What are the factors considered for the selection of a freezer? <b>(5 marks)</b> Also, based on the rate of formation of the ice front, how the freezers are classified? Describe any two freezers in detail. <b>(5+5 marks)</b>	15	CO2
<b>Section D</b> <b>(2Qx10M=20 Marks)</b>			
Q 1	What are drying and dehydration? Describe different methods of moisture content estimation.	10	CO5
Q 2	What is post-harvest loss? Describe the reasons for post-harvest losses in detail.	10	CO5